

JUL 13 1945

CARNEGIE

T
171
C2845

MAGAZINE

CARNEGIE
INSTITUTE

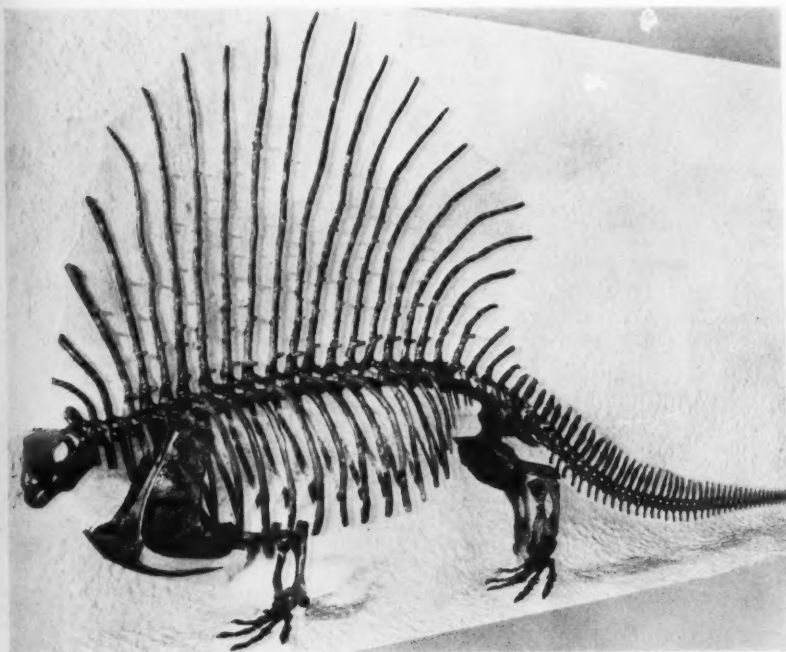
CARNEGIE
INSTITUTE OF TECHNOLOGY

CARNEGIE
LIBRARY

VOLUME XIX

PITTSBURGH, PA., JUNE 1945

NUMBER 3



EDAPHOSAURUS

*A finback reptile such as roamed Pittsburgh 250 million years ago
will be on display in the Hall of Vertebrate Fossils at Carnegie Institute late in July*

(See Page 67)

CARNEGIE MAGAZINE

PUBLISHED MONTHLY EXCEPT AUGUST AND SEPTEMBER
IN THE INTEREST OF CARNEGIE INSTITUTE, CARNEGIE
INSTITUTE OF TECHNOLOGY, AND CARNEGIE LIBRARY,
PITTSBURGH, PA. SUBSCRIPTION PRICE, ONE DOLLAR A
YEAR; SINGLE COPY, TEN CENTS. ON SALE AT THE IN-
STITUTE POST OFFICE AND THE BOOK DEPARTMENTS OF
KAUFMANN'S AND JOSEPH HORNE COMPANY.

OFFICE OF THE PRESIDENT OF CARNEGIE INSTITUTE

WILLIAM FREW, Editor
JEANNETTE F. SENEFF, Editorial Assistant

EDITORIAL COUNCIL

ANDREY AVINOFF ROBERT E. DOHERTY
MARSHALL BIDWELL RALPH MUNN
JOHN O'CONNOR, JR.

VOLUME XIX

NUMBER 3

JUNE 1945

•••

MY LAND

Not for long can I be angry with the most
beautiful—

I look out of my vengefulness, and see her so
young, so vastly young,
Wandering her fields beside Huron,
Or peering over Mt. Rainier.

Is she in daisies up to her knees?
Do I see that fresh white smile of hers in
the morning-shadowed city?

Is this she clinging to the headlight of the
locomotive that roars between the pine-
cone mountains?

Are her ankles in the wash of sea-weed beside
the sea-battered rocks?

Ah! never the curve of a hill but she has just
gone beyond it,

And the prairies are as sweet with her as with
clover and sage.

Her young breasts are soft against willow-
leaves,

Her hands are quicker than birds in the vague-
ness of the forest.

Whether it is a dream that I have honey-
gathered from the years of my days,

Whether it is so, and no dream,

I cannot help the love that goes out of me to
these plains and hills,

These coasts, these cities, and these seas.

—JAMES OPPENHEIM

•••

The CARNEGIE MAGAZINE freely grants permis-
sion upon request to reprint without limit articles
that appear in its pages, with the usual credit.

CARNEGIE INSTITUTE

4400 Forbes Street

Hours: 10:00 A.M. to 6:00 P.M., weekdays
2:00 to 6:00 P.M., Sundays

FINE ARTS GALLERIES

JUNE 7—JULY 15, 1945

Exhibition of Paintings by Pittsburgh Artists.

OCTOBER 11—DECEMBER 9

Painting in the United States, 1945

•••

Outdoor drawing and painting lessons will again
be offered during July by the Department of Fine
Arts. The lessons are open to all interested chil-
dren from ten to fifteen years old. (See page 72)

LIBRARY

Hours: 9:00 A.M. to 10:00 P.M., weekdays
2:00 to 6:00 P.M., Sundays

The Business and Downtown branch libraries
will close at 1:00 P.M., Saturdays during the
summer.

•••

In November the Carnegie Library of Pittsburgh,
Ralph Munn, Director, will observe the Fiftieth
Anniversary of its opening. Included in the plans
for celebration is an Open House at the Central
Library on Monday, November 5, from 7:00 to
10:00 P.M.

MUSEUM

The newly-mounted Edaphosaurus will be on
permanent display in the Hall of Vertebrate Fos-
sils late in July.

•••

The Pacific Show, with mural maps, dioramas,
and exhibits of textiles, insects, birds, mammals,
plants, and shells, continues to give illustration to
those countless letters arriving these days from
the "vast and manifold Pacific world."

MUSIC HALL

The organ recitals by Marshall Bidwell will be
discontinued during the summer, to be resumed
the first weekend in October.

•••

Community church services will be held in
Music Hall at 7:45 P.M., Sunday evenings through
September 2.

•••

The Carnegie Institute, in the broadest sense,
holds its possessions in trust for mankind and for
the constant welfare and happiness of the race.
Anyone, therefore, who by a gift of beautiful
works of art, or objects of scientific value, or a
donation to its financial resources, aids in the
growth of these collections and the extension of
its service is contributing substantially to the
glorious mission of the Institute.

EDAPHOSAURUS—A FINBACK REPTILE

By O. E. JENNINGS

Acting Director, Carnegie Museum



R. V. Witter in 1941 in Archer County in northern Texas and was obtained by the Carnegie Museum by exchange with Harvard University. It was prepared for display by S. Agostini, under the direction of J. LeRoy Kay, Curator of Vertebrate Paleontology of the Carnegie Museum, and will be on exhibit in the Hall of Vertebrate Paleontology late in July.

The specimen has been classified as *Edaphosaurus boanerges* Romer, belonging to a long-extinct group of reptiles known as the Pelycosaurus and regarded as quite primitive. They thrived during the latter part of the Coal Period and on through the succeeding Permian time and later gave way to various other groups of mostly more advanced types of reptiles including the Dinosaurs, such as the Diplodocus.

This particular specimen was found in northern Texas in carbonaceous sedimentary deposits of Permian age, probably about 200,000,000 years old. In life it probably roamed about the swamps and swampy forests which occurred in that region at that time. During the latter part of the Coal Period, still farther back in time, *Edaphosaurus* lived in the Pittsburgh district, and the Carboniferous Forest Group at the entrance to the Hall of Vertebrate

Paleontology contains a natural size, lifelike reproduction of one in company with *Eryops*, a massive-headed, short-tailed, short-bodied amphibian of a salamanderlike type, which also thrived in these swamp-forests.

It is likely that our Carboniferous Forest Group represents quite closely the conditions in which the Texan *Edaphosaurus* lived. These forests consisted mainly of large trees of the extinct *Lepidodendrons* and *Sigillarias*, from which most of our coal was formed. These were giants of old as compared with their living representatives, the Ground Pines, Club Mosses, and *Selaginellas*. Along with these were treelike *Calamites*, ancient extinct relatives of our much smaller modern Scouring Rushes or Horse-Tails; and various ferns, seed-ferns, and strap-leaved *Cordaites*. Scuttling around in these weird swamp-forests were three-inch-long cockroaches, while darting about overhead were giant dragonflies.

In these weird and uncanny forests there were no bright flowers, no butterflies, no birds; no sound, except the sighing of the wind, as through a pine woods, the clicking of an insect's wing, and the splashing of the reptiles and amphibians in the swamp pools—or possibly some of them might have made grunting or croaking sounds like some of the modern living forms.

It seems quite fitting that in these strange swamp-forests, nature should produce such unique and bizarre animals as the *Edaphosaurus*. *Dimetrodon*, a closely related reptile, was the most common carnivorous animal of Permian times. It had long spines growing upright from the back supporting a sail-like flap of skin. *Edaphosaurus* was still more specialized in that it had short spurs projecting from the sides

of the spines. What function, if any, this sail-like structure served is not known. As may be seen either from the reproduction in the Carboniferous Forest Group or from the fossil itself, a strong side wind would likely upset the animal. The reptiles of the Pelycosaur group to which *Edaphosaurus* belongs tend to have a rather slender body, although they do have a primitive feature of sprawled-out legs, which would help in maintaining equilibrium.

The fossil specimen in the Museum is about four feet long from the tip of the nose to the tip of the tail, while the sail is more than two feet high, measuring from the top of the back. The feet sprawl out sidewise to a width of only about twenty inches, from side to side, so that they form a very narrow base for the maintenance of an upright position. *Edaphosaurus* is another example of overspecialization and conse-

quent ultimate extinction which the paleontological story so often unfolds.

The reptiles became wonderfully diversified and reached the height of their remarkable evolution in the time of the great dinosaurs, such as *Diplodocus* and *Tyrannosaurus* in the Jurassic and early Cretaceous times, something like 100,000,000 years after our *Edaphosaurus* was crawling around in the swamp-forests of northern Texas.

Since our specimen does represent a primitive group well back toward the beginning of reptilian evolution, it is a valuable addition to an already notable display of representative fossil reptiles.

—41—

The carboniferous forest was installed in 1940, presented by Mrs. Douglas Stewart in memory of her husband, a former Director of the Museum, and designed by Ottmar F. von Fuehrer, Museum artist.



EDAPHOSAURUS AND ERYOPS IN THE CARBONIFEROUS FOREST

SUMMER SHOW OF PITTSBURGH ARTISTS

FOR the twelfth time since the first exhibit of its kind in 1932, the Carnegie Institute is presenting its Exhibition of Paintings by Pittsburgh Artists. The showing of sixty-three paintings by thirty-four artists opened on June 7 in Galleries E and F and will continue through July 15.

The event has come to be popularly known as the "Summer Show." It is one of four exhibitions held annually at the Institute in which Pittsburgh artists are included. The first one is the Annual Exhibition of the Associated Artists of Pittsburgh, and while it is under the auspices of the Association, the Carnegie Institute houses it and co-operates in its presentation.

It is a jury-selected show and includes paintings, sculpture, watercolors, prints, drawings, and crafts. The second exhibition is a one-man show by a Pittsburgh artist. This is at the invitation of the Institute and, as the title indicates, is given over to a summary of the work of one artist. Then for the Founder's Day show, Painting in the United States, an average of ten Pittsburgh artists are invited.

The summer show differs from all of these. It is limited to oil paintings and is organized by invitation of the staff of the Department of Fine Arts. The invitation is extended only to painters who are residents of Allegheny County. Each artist is asked to send two paint-

ings. The invitation for the summer show is based largely on an artist's representation in the exhibition of the Associated Artists of Pittsburgh, but his general record over a period of years is also taken into consideration. This summer show is the Carnegie Institute version of painting in Pittsburgh for the year 1945.

Probably the outstanding feature of this year's show is the number of new names in it. There are nine artists, to be exact, who are making their initial appearance. The new names are: John D. Clarkson, Aleta Cornelius, William C. Libby, Leonard Lieb, Frances Cox Sankey, Marjorie Wickerham Schroeder, Richard H. Wilt, Robert R. Young, and

Virginia J. Ward. As one of the aims of this annual event is to seek out and reveal significant talent, the presence of nine new people in the exhibition is a healthy sign for painting in the district.

It should be noted that three of the artists represented are now in the armed services: Frank L. Trapp, Richard H. Wilt, and Richard E. Williams. It should also be recorded that there are a goodly number of artists absent from this exhibition who have been represented in previous shows and no doubt would have been included in this year's had they not been engaged overseas in the service of their country.

In the first summer show, held in 1932, there were fifty-two paintings by



JANIE BY CAROLIN MCCREARY
Lent by Dr. Milton Jena



COMBATIVES BY RICHARD E. WILLIAMS

eighteen artists. The exhibition was not presented again until 1935, and that was the only break in the series. That year fifty-two paintings by twenty-six artists were shown. In 1936 twenty-five artists exhibited forty-seven paintings. The following year there were fifty-six canvases in the show, the work of twenty-nine artists, and in 1938 forty-nine paintings by twenty-six artists. The 1939 exhibition included fifty-five paintings by twenty-nine artists. In 1940 there were fifty-one canvases by twenty-eight artists. The 1941 show comprised fifty-six canvases illustrating the work of thirty artists, and sixty-four paintings by thirty-four artists were exhibited in 1942. Thirty-two artists were represented in 1943 by sixty-two paintings. Last year there were sixty-one canvases by

PITTSBURGH—A BRIEF HISTORY

The pamphlet by Rose Demorest, *Pittsburgh—A Brief History* may be secured free of charge from the Carnegie Library of Pittsburgh or any of the branch libraries. The concluding half of the pamphlet is reprinted, pages 81 to 84, in this issue of CARNEGIE MAGAZINE.

thirty-two artists. Through the course of twelve summer shows, the work of one hundred and four artists has been represented.

For the record, the complete list of artists in the 1945 exhibition is: L. W. Blanchard, John D. Clarkson, Aleta Cornelius, Marty Lewis Cornelius, C. Kermit Ewing, Everett Glasgow, Balcomb Greene, Johanna K. W. Hailman, Margaret Edmonds Jensen, Paul Karlen, Robert L. Lepper, William C. Libby, Leonard Lieb, Henry Lisi, R. D. Long, Norwood MacGilvary, Carolin McCreary, Louise Pershing, Wilfred A. Radio, Samuel Rosenberg, Frances Cox Sankey, Mildred Floyd Schertz, Marjorie Wickerham Schroeder, Raymond Simboli, Rachel McClelland Sutton, Helen J. Topp, Frank A. Trapp, Russell G. Twiggs, Virginia J. Ward, Abe Weiner, Milton Weiss, Richard E. Williams, Richard H. Wilt, and Robert R. Young.

J. O'C., Jr.



GINGER HILL ROAD BY C. KERMIT EWING



DR. ANDREY AVINOFF RESIGNS AS DIRECTOR OF CARNEGIE MUSEUM

IT was with regret that the Board of Trustees of Carnegie Institute, at its meeting held on June 22, 1945, accepted the resignation of Dr. Andrey Avinoff as Director of the Carnegie Museum.

Dr. Avinoff has been in bad health for some time and acting under the advice of his physicians tendered his resignation, and the Board was convinced that for his own best interests it should be accepted.

Dr. Avinoff has been connected with the Carnegie Museum since 1924, and in 1926, on the death of Douglas Stewart, succeeded him as Director of the Museum. A man of great talents, broad scientific attainment, and of a most kindly and enthusiastic disposition, he became during these years not only nationally recognized and admired but loved by the whole community.

His resignation has been accepted with the greatest regret by the Board of Trustees, who in doing so conferred upon him the title of Director Emeritus.

MUSEUM SUMMER PLANS

MONTANA and Utah will be visited by Carnegie Museum expeditions this summer, in addition to the Hudson Bay region, Arizona, British Columbia, and Louisiana, already noted in CARNEGIE MAGAZINE. Members of the Museum staff will also work in Ontario, Michigan, and Ohio, and the home section of Pennsylvania, during the next few months.

MONTANA

J. LeRoy Kay, Curator of Vertebrate Paleontology, and R. L. Fricke, of the Section of Education, Carnegie Museum, left on June 10 for a four months' paleontological expedition into western and northwestern Montana. They plan to revisit one or two localities that have been investigated in former years, for the most part north of the Clarke's Fork River through the intermontane basins to the Canadian line.

The men will collect fossils from all the exposures and map geologically the areas visited. They expect to find the ancestors of the horse, camel, rhinoceros, tapir, deer, many rodents and carnivores, which will serve as indices for determining the age of the different layers of the earth's crust.

Mr. Fricke, aside from helping Dr. Kay, will make a collection of botanical specimens and a few small birds and mammals.

UTAH

Through the generosity of C. E. Cowan of Greensburg, an exploration of untouched Indian caves located along the Colorado River canyon below Moab, Utah, has been made possible.

The Museum staff members will be accompanied on this trip by Dr. Herbert Spencer, who has just left the presidency of Pennsylvania College for Women to become president of Bucknell University, and David Rial, principal of the Brashear and Spring Lane Elementary Schools, Pittsburgh. Dr. Spencer will be official photographer.

The canyon is located in an inaccessible region in southern Utah, which will require travel by pack train and camping while work is in progress. The party will investigate a number of prehistoric cliff dwellings for material and evidence of early man on this continent.

ONTARIO, MICHIGAN, OHIO

E. R. Eller, Assistant Curator of Invertebrate Paleontology, will do field work this summer in the Marcellus-Delaware-Dundee formations of Ontario, Michigan, and Ohio. An attempt will be made to correlate these horizons and to determine the correct age of oil-well cuttings from deep wells of the Michigan field by the use of the scolecodont fauna. Other Middle Devonian formations will also be studied as checks. For the uninitiated, scolecodonts are the teeth of marine worms and they occur abundantly as fossils in many ancient rock strata.

PENNSYLVANIA

The Section of Herpetology staff, headed by M. Graham Netting, will emphasize local collecting in the Pittsburgh area to obtain additional distributional records of the local herpetofauna, that is, amphibians and reptiles, for use in a popular list now being prepared for publication:

Walter R. Sweadner, Curator of Entomology, will continue his statistical studies of the moths caught at the Preston Station at Butler and will also continue the investigations started last summer in connection with the possible relation of insects to poliomyelitis. This will consist largely in the identification of insects caught in the vicinity of cases of this disease.

Dr. O. E. Jennings, Curator of Botany and Acting Director of the Museum, will continue the preparation of a publication on the flora of the upper Ohio drainage basin, for which Dr. Andrey Avinoff has already completed the colored plates.

In the Section of Botany, LeRoy K. Henry and David R. Sumstine will continue their work on the collection and study of the mushrooms and other fungi of western Pennsylvania. Dr. Sumstine is nearing the completion of his study of a large collection of about three thousand specimens of fungi collected by Dr. Albert Commons in the 1880s and 1890s, mostly in Delaware and New Jersey. This collection is the property of the Philadelphia Academy of Sciences and has been lent to Dr. Sumstine for the purpose of study and revision.

ART IN NATURE

THE Department of Fine Arts will again offer a series of lessons centering around the theme, "Art in Nature," on Tuesdays, Wednesdays, and Thursdays during July. On fair days the children will paint in Schenley Park, where trees and shrubs, flowers and fountains, wading pools and garden statues, will provide subject matter. In the event of rain the natural history halls of Carnegie Museum with their collections of birds, "bugs," and butterflies, will become the schoolroom.

The children will work under the direction of Amelia Wheeler, docent in the Department of Fine Arts. Because of her experience as an art and nature study teacher, Miss Wheeler is in a particularly happy position to make these mornings in the park memorable hours for the boys and girls.

Unlike the winter classes where children are selected by their individual schools to fill assigned quotas, the summer classes will be open to all children between the ages of ten and fifteen who are interested in drawing.

The 10- to 12-year-olds will have their first class on Tuesday, July 3, at 10:00 A.M., and the 13- to 15-year-olds, on Friday, July 6, also at 10 o'clock. For further information, telephone Margaret M. Lee, Director of Educational Work, Department of Fine Arts, Carnegie Institute, at Mayflower 7300.

A DISTINGUISHED CHEMIST RETIRES

BY ERNST BERL

Research Professor, Carnegie Institute of Technology

I was born the youngest of seven sons in a small place of about seven thousand people in the Austrian Silesia on the seventh day of the seventh month of the year 1877 on Saturday, the seventh day of

the week. This small country was remarkable in many ways. A number of men who afterwards made contributions to society came from there. I mention Gregor Mendel, who eighty years ago created the new science of heredity. The parents of Franz Schubert were born near my birthplace. Many professors of Central European universities were born in this small country.

My first trouble arose when competition developed between art and technique. I had to take violin lessons with five or six other boys. Fortunately enough, there was a blacksmith in the house of the teacher and we boys were much more interested in helping the blacksmith than in becoming future Kreislers. When I was ten years old the Humanistic high school which had existed for more than two hundred years in my small birthplace was closed. It was self-evident that the young fellow should go to the next bigger place where there was a kind of technical school for boys. This became of greatest importance for me because when I was fifteen years old I came under the influence of an excellent chemistry teacher. This man was responsible for my selecting, as my lifelong activity, chemistry and not history, for which I had and have a great inclination. If today, more

than fifty years after I made my decision, my father would again ask me, "What would you like to be?" I would answer without hesitation, "I have to be a chemist." This decision was facilitated by the fact that my father was a lumber merchant and that he sold timber to cellulose plants. At seventeen years of age I decided to study chemistry and to become a cellulose chemist, which later came true. I spent four years at the Technical University of Vienna. I must say, without being accused of ingratitude, that the years there were of no great importance to me. We had no outstanding teachers. We learned our job as it had been done twenty-five years before and had very little contact with modern scientific progress.

Then I performed my military service with the heavy artillery. In school we had excellent officers so that I decided to become an explosives chemist, which plan was also realized later on. I gave up my idea of entering a powder plant as a chemist. Knowing very well how little I had acquired during my stay at the Technical University of Vienna, I felt I should continue my studies. Again by a happy accident, or one could say that my guardian angel told me what to do, I went to Zurich. Here I came in contact, first as a student, then as assistant, with the greatest scholar in a special field of theoretical chemistry,

This article is part of the address given at a dinner honoring Dr. and Mrs. Ernst Berl on June 8, 1945. Dr. Berl, who retires this year, came from Germany to Carnegie Institute of Technology in 1933, as did Dr. Otto Stern, at the request of the late Dr. Thomas S. Baker, at that time President of Carnegie Tech.

Alfred Werner. Werner had no interest whatsoever in technical matters but in his field he did outstanding work. He deserved fully the name of "the inorganic Kekule." He brought order into the chaos of molecular compounds.

Having tried in vain to enter the chemical industry, due to the depression of 1903-04, for three semesters I studied physical and electro chemistry at the Zurich Technical University and finally became assistant and collaborator to the great George Lunge, one of the outstanding chemical technologists of this time. I owe these great teachers of mine, especially George Lunge, the same gratitude which sons very often express toward their fathers. For reasons of health Lunge had to retire two years before he wanted to. Those great scientists in Zurich, Alfred Werner and my late friend Richard Willstätter, saw in me his successor. But again my angel said, "No, this young man is not yet prepared for such a position." In 1910 I left Zurich. I chose to enter industry as chief chemist of at this time the largest rayon factory in the world at Tubize, Belgium, and to decline a call as professor of chemical technology at the newly formed Norwegian Technical University of Trondheim. I spent four most important years in Belgium.

Having become established there in a nice position, I could start a family. Mrs. Berl's and my families came from the same small place and had known each other for three hundred years. We were married in March 1912. This is the date of an event which more than anything else has been a source of happiness to me. Then came the year 1914. My wife with, at this time, our only son went to the old country at the beginning of July. I followed at the end of that month. Then the general mobilization took place on August 1, and I joined my heavy artillery regiment in Vienna.

Again something happened which today, after more than thirty years, seems simply unbelievable to me. Without knowing anybody in the War Depart-

ment, on August 2, 1914, a Sunday afternoon, I tried to contact the high ranking officer responsible for the production of smokeless powder. Fortunately enough, I could see this General. I told him I had acquired some knowledge of nitrocellulose production, that I was a collaborator of George Lunge, and that I thought my services in a chemical capacity would be better than as a Lieutenant in one of the replacement battalions. The General at once gave orders for my joining the big government powder plant about twenty miles southwest of Vienna. A few months later I became the chief chemist of the War Department, heading a group of capable men. We had not only to find out what should be done, but we had to do it.

Austria was not in the same fortunate position as this great country is, with an extremely well-developed industry which after short notice quickly produces the gigantic implements of war. What is done here now is a phenomenal technical miracle. I remember that in 1917 when this country entered the war I told the General the war was lost for the Central Powers. I explained that as long as the United States was outside of the struggle the technical facilities of the Allies, France, England, and Russia, which did not count much at this time, were practically equal to those of the Central Powers, but that the United States brought in 150 to 200 per cent superiority.

In the fall of 1918, before the war ended, I had the choice of entering industry in a responsible high position or of returning to the teaching-research position at one of the technical universities of Germany. I think I decided rightly to go to Darmstadt in the spring of 1919. There I spent a little more than fourteen years in fruitful work.

Then came 1933. Knowing Germany and other countries, I foresaw the development which finally took place. I resigned, which was only a formality. I was prepared either to accept a position

as a teacher at the University of Utrecht in Holland or to go to London and to become a chemical adviser. Here again the angel did his work.

In 1924 I came to this country for the first time as a consultant for a rayon plant in Virginia. I visited Pittsburgh and had to see the Carnegie Institute of Technology. Then I had the privilege of meeting Dr. Baker. In 1931, when the Third International Conference on Bituminous Coal was held at Carnegie Tech, I was invited to read a paper on my work concerning the artificial formation of substances similar to bituminous coal and petroleum. In February 1933, Dr. Baker came to Germany to give the Karl Schurz lecture there. He paid us a visit in Darmstadt and we spent a most delightful day visiting the Liebig House, the Kekule Room, and other interesting places in this town. On my birthday, July 7, 1933, the telephone rang. On the other end was President Baker who spoke to me from Frankfurt and asked if I could see him there. Mrs. Berl at once had the hunch that Dr. Baker would make a proposition. As always, she was right. I took the next train and joined him two hours later. He asked if I would accept a call to the Carnegie Institute of Technology. Without hesitation, I accepted.

So we came over in September 1933. Since then, these nearly twelve years of humble activity have been a source of greatest enjoyment.

In my parents' home I saw how life should be lived. My father, without having studied engineering, was a perfect engineer. When roads had to be built, his advice was asked. The saw-mills that he built were constructed according to sound engineering principles. It may be that some of this heritage came to his youngest son. My mother was the finest person who ever lived. She raised a large family. Her advice was sought by her neighbors and always very much appreciated and respected. She was deeply religious and told us children that we should always

devote a certain part of our activity to the welfare of less fortunate people. My great teachers taught me how to handle interesting and important scientific and technical problems. I do not know if they would be satisfied with what their pupil has done. He knows very well the modest value of his own accomplishments but you, President Frew, and other members of your organizations seem to have a somewhat different viewpoint. I have no right to argue. I have to do only one thing and this is to express again and again my deepest gratitude for all the kindnesses which have been shown.

Today we have the honor of being the guests of the president of one of the great institutions of this country. What is the cause of this distinction, the memory of which will remain in our hearts as long as we live? Frankly, I do not know. The amount of teaching which I was encouraged to do was not great. It concerned only side lines. I must confess that during the many years of my academic activity in Switzerland, then in Austria, finally in Germany, and now here, I have enjoyed the contact with young people immensely. It is similar to what the Greek fable says about Antaeus who, in contact with the earth, always recovered strength. So we teachers remain young in contact with youth.

I have always felt that teaching and research is not a profession but a mission. I remember very well that, more than forty years ago, when I was assistant to Alfred Werner, Nobel Prize winner in 1913, this great man often told me: "No teaching without research, no research without teaching."

Probably by heritage, nature gave me both the desire and the curiosity to find out a little more about things I did not know, and there are many of them. I, therefore, had to form my own opinions about different scientific and technological matters. This cannot be done better than by one's own research. This is the reason why, with capable collaborators, I tried to study different

problems. The results of this work have been or will be published in full. A great man once said, "In the field of science, chance favors only the mind that is prepared."

For thousands of years curiosity has been one of the powerful forces in thinking men. In this century we have made more technological progress than in thousands of years before. We have learned to a certain degree to make use of the forces which nature puts at our disposition. Unfortunately, we have not made much progress in mastering the forces in us. This is one of the causes of the terrible struggles which destroy men and many very valuable cultural works. In many religions we find the principle incorporated that forces of light have to fight forces of darkness. This is expressed best in the Persian religion of Zoroaster. It seems as if contrary laws fight each other. One is the law of destruction which always invents new means to reach its goal and which keeps the nations on the battlefield. The other law, the law of peace, tries to heal the wounds which have been caused by the wish to conquer countries. One destroys life, the other conserves life. Science, which gives the means to maintain the laws of peace,

unfortunately serves the dark forces of destruction also. We hope the day may come soon when science will hasten only cultural progress, that neither blood nor tears, but only happiness will result from the work of the men of science who, in the words of the great French scientist, Le Chatelier, form the elite of mankind. They are responsible for the supremacy of a nation. Every effort has to be made to increase the number of these high priests of mankind. Institutions like the Carnegie Institute of Technology work toward this goal.

The rays of the setting sun warm our hearts. In nature they gild first the valleys, then the peaks of the mountains, and finally, before the night comes, the clouds high in the heavens. This is the reverse of what happens when the sun rises. The same occurs with man. The scientist sees in the coming into existence, the growing, and finally the fading away, the great eternal laws of nature. He knows that Providence has made arrangements that are best for all nature, and, therefore, also for men. Only those really important things which cannot be bought with money count. Among them rank first a full life, followed by recognition such as we have received tonight.



DR. OTTO STERN RECEIVES THE NOBEL PRIZE AWARDS FROM DR. ROBERT E. DOHERTY IN THE PRESIDENT'S OFFICE AT CARNEGIE TECH ON JUNE 7. (See opposite page)

THE NOBEL PRIZE PRESENTATION

BY MAX E. HANNUM

Manager, Bureau of News and Publications, Carnegie Institute of Technology

THE gold medal and diploma for the Nobel Prize in Physics for the year 1943, awarded by the Royal Swedish Academy of Science to Dr. Otto Stern, Research Professor of Physics at Carnegie Institute of Technology, were formally presented by President Robert E. Doherty at a ceremony in the president's office on Thursday morning, June 7.

Formal announcement of the award had been made at a public occasion in New York City on December 10 and Dr. Stern had previously received the prize money, amounting to approximately \$29,000.

Dr. Doherty made the presentation to Dr. Stern on behalf of the Minister of Sweden and at the request of the Nobel Foundation in Stockholm. Those present at the ceremony included the Executive Board of Carnegie Institute of Technology; William Frew, Chairman of the Board of Trustees; and representatives of the Department of Physics.

After the formal presentation, Professor Stern addressed the gathering briefly as follows:

"I realize that this award is only in part a recognition of my personal work, but mainly of the work of all scientific physicists. Progress in pure science can only be achieved in a scientific atmosphere where everyone is allowed to choose his own problem and can discuss his work freely with other scientists. Both conditions for scientific work will be in danger in the future: first, the growing importance of the results of pure science for the industrial and military development will make it necessary to maintain a certain degree of



secrecy and will seriously impede the free interchange of ideas; secondly, the basis and root of all scientific work is the absolute freedom of the scientist to

choose his problems. Because of the fundamental importance of the results of scientific work for practical purposes, the material resources for research will be concentrated on the solution of practical problems and the scientists themselves will hesitate to devote their work to problems without apparent significance for defense, social and industrial progress.

"We must find the right balance between pure and applied science. We must maintain a high standard of pure science. We will have to do this even if we disregard the educational and cultural significance of science, if only for the reason that without a vigorous pure science there will be no real progress in its applications.

"For these reasons, I am deeply grateful to the Royal Swedish Academy, not only for the great honor bestowed on me, but even more for the help given to pure science through the great prestige of Nobel and the Nobel Foundation."

Dr. Stern resigned his position at the Institute of Physical Chemistry of Hamburg University in 1933, in protest against the Nazi regime, and came to Carnegie Tech as Research Professor at the invitation of the late Dr. Thomas S. Baker. In his Laboratory of Molecular Physics provided by the Buhl Foundation, Dr. Stern and his long-time associate, Dr. I. Esterman, have concentrated their efforts since that time.

WANTED: A UNITED NATIONS SONG

By MARSHALL BIDWELL

Organist and Director of Music, Carnegie Institute



It is a curious and lamentable fact that no outstanding song has emerged from the present World War. To be sure, there are stirring marches such as *Anchors Aweigh*, *The Caissons Go Rolling Along*, *Marching Along*

Together, *The Marine Hymn*, and the *Army Air Corps Song*. There is nothing wrong with these but they all sound so much alike that it is sometimes difficult to tell them apart.

Then there is the nostalgic type, such as *I Left My Heart at the Stage Door Canteen*, *Comin' In on a Wing and a Prayer*, and *Say a Prayer for the Boys Over There*. These sentimental effusions are mere routine hack work with the Tin Pan Alley boys, not to be compared in the same breath, for instance, with the Stephen Foster songs with their universal appeal to love of home. Such melodies have none of the classic restraint of *Old Black Joe*—all of which only serves to bear out my conviction that a truly sincere, profound feeling has yet to come from Broadway. Even the electrifying *Over There* of World War I, with its backslapping, racy humor, lacks the crusading spirit, there is no hint of a great Cause, such as making the world safe for Democracy.

It is surprising that something of the character of *The Battle Hymn of the Republic* or *The Marseillaise* has not evolved from the heart-rending experiences of this terrible war. Perhaps this is too much to expect, for the simple reason that a great war song with the emotional surge of these two just men-

tioned only occurs once in a long time.

When will a truly great song make its appearance? Especially in times like these, when so many of us have been looking anxiously toward San Francisco, why shouldn't we have a great paean, a crusading hymn, to express the ideals and hopes of the peace-loving United Nations—something that will reflect the march toward world unity. Are we so far from our goal that such a thing is inconceivable? Are not the American people sufficiently aroused that this surge of feeling can find expression in music?

A few isolated attempts in this direction have been made, such as the march, *The United Nations*, for which Harold J. Rome has written words to a rather trivial tune by Shostakovich. This song has gained no headway and seems doomed to oblivion.

We can only win the peace if we make the whole world feel like uniting in a common cause; if we can learn to think in global terms. Those of us who feel keenly about this matter believe there is need of an inspirational song that will strengthen our spirits and our determination to win the peace.

In the Sunday afternoon organ recitals given in Carnegie Music Hall during the 1944-45 season, we have featured anthems of thirty-four of the United Nations. In addition to this, many famous war songs have been played, songs which have inspired oppressed peoples in their struggles against slavery and tyranny. Some of these have been sung by the audience.

Believing such a list may be of interest, we are giving below the anthems of the fifty nations who have participated in the San Francisco conference, so far as they can be ascertained before going to press.

CARNEGIE MAGAZINE

ARGENTINA

Oid, mortales, el grito sagrado Libertad
Mortals, Hear the Sacred Cry Freedom
 WORDS: Vincente López y Planes
 MUSIC: José Blas Parera

AUSTRALIA

Advance Australia Fair
 WORDS AND MUSIC: P. D. McCormick

BELGIUM

La Barabanne
 WORDS: Jenneval
 MUSIC: François van Campenhout

BOLIVIA

Bolivianos, el hado propicio
Bolivians, Propitious Fate
 WORDS: Ignacio de Sanjines
 MUSIC: Benedetto Vincenti

BRAZIL

Ouviram do Ypiranga as margens placidas
They Heard the Peaceful Banks of the Ypiranga
 WORDS: Osorio Duque Estrada
 MUSIC: Francisco Manoel da Silva

CANADA

The Maple Leaf Forever
 WORDS AND MUSIC: Alexander Muir
 Also sung—
 O Canada! Terre de nos aïeux
O Canada! Our Home and Native Land

CHILE

Ha cesado la lucha sangrienta
The Bloody Struggle Is Over
 WORDS: Eusebio Lillo
 MUSIC: Ramón Carnicer

CHINA

San Min Chi I
Three Principles of Democracy
 WORDS: Dr. Sun Yat-Sen
 MUSIC: Ch'eng Mao-Yun
 Also sung—Tsung-kuoh hiung li jüh dschou tiän
The Middle Kingdom Stands Like a Hero
 WORDS AND MUSIC: Anonymous

COLOMBIA

Oh! Gloria inmarcescible
Oh! Unfading Glory
 WORDS: Rafael Núñez
 MUSIC: Orestes Sindici

COSTA RICA

Noble patria, tu hermosa bandera
Noble Fatherland, Your Beauteous Banner
 WORDS: José M. Zeledón
 MUSIC: Manuel M. Gutiérrez

CUBA

Himno Bayamés (Bayamo Hymn)
 WORDS AND MUSIC: Pedro Figueredo

CZECHOSLOVAKIA

Kde domov můj? (Czech National Hymn)
Where Is My Native Land?
 WORDS: Josef Kajetán Tyl
 MUSIC: Frantisek Skroup
 Combined with: Nad Tatrou sa blýska

(Slovak Folk Song)

Lightning Strikes High Tatras Mountains
 WORDS: Janko Matúška
 MUSIC: Traditional

DENMARK

Kong Kristian stod ved højen Mast
King Christian Stood beside the Mast
 WORDS: Johannes Ewald
 MUSIC: J. E. Hartmann

DOMINICAN REPUBLIC

Quisqueyanos valientes, alcemos
Brave Men of Quisqueya, Let Us Hoist
 WORDS: Emilio Prud'homme
 MUSIC: José Reyes

ECUADOR

Salve! Oh patria! mil veces; Oh Patria!
Hail! Oh Fatherland! A Thousand Times!
 WORDS: Juan León Mera
 MUSIC: Antonio Neumann

EGYPT

An instrumental march by Verdi

EL SALVADOR

Saludemos la patria orgullosos
Let Us Proudly Greet the Fatherland
 WORDS: Juan J. Cañas
 MUSIC: Juan Alberle

ETHIOPIA

Etiopia hoy, des yibalış
Ethiopia Hail, Rejoice
 WORDS: A group of learned Ethiopians
 MUSIC: M. K. Nalbandian

FRANCE

The Marseillaise
 WORDS AND MUSIC: Rouget de Lisle

GREECE

Se gnorizo apo ten kopsi tu spatjiu ten tromeré
Yes, I Know Thee by the Lightning of Thy Tyrant-Slaying Glaive
 WORDS: Dionysius Solomós
 MUSIC: Nicholas Mántzarios

GUATEMALA

Guatemala feliz!
Happy Guatemala!
 WORDS: José Joaquín Palma
 MUSIC: Rafaelo Alvarez

HAITI

La Dessalinienne
 WORDS: Justin Lhérisson
 MUSIC: Nicolas Geffrard

HONDURAS

Tu bandera es un lambo de cielo
Your Flag Waves like a Symbol in Heaven
 WORDS: Augusto C. Coello
 MUSIC: Carlos Hartling

INDIA

God Save the King
 WORDS: Anonymous
 MUSIC: Variously attributed to T. A. Arne, to John Bull, Henry Carey, and James Oswald, but probably from an old folk song.

CARNEGIE MAGAZINE

IRAN

Shahanshah—i ma Zandah bada
Long Live Our Shabinsbah
 Words: S. Afsar
 Music: Lieutenant Najmi Moghaddam

IRAQ

No national anthem.
 The Royal Salute, a fanfare composed by Major
 A. R. Murray

LEBANON

Hymne Nationale Libanaïs
 Words: Rachid Nakhlé
 Music: Wadia Sabra

LIBERIA

Salve, Liberia, salve!
All Hail, Liberia, Hail!
 Words: Daniel Bashiel Warner
 Music: Olmstead Luca

LUXEMBOURG

Onst Hémécht
Our Homeland
 Words: Michel Lentz
 Music: J. A. Zinnen

MEXICO

Méxicanos, al grito de guerra
Fellow Countrymen, Mexico Needs You
 Words: Francisco González Bocanegra
 Music: Jaime Nuño

NETHERLANDS

Wilhelmus van Nassouwe, ben ick van duijt-
 schen bloet
William of Nassau Am I of German Blood
 (The oldest national hymn)
 Words: Philip van Marnix
 Music: French Huguenot melody

NEW ZEALAND

God Defend New Zealand
 Words: Thomas Bracken
 Music: R. A. Horne

NICARAGUA

La Patria amada canta este dia
Beloved Country Sing This Day
 Words and Music: Anonymous

NORWAY

Ja, vi elsker dette Landet
Yes, We Love This Country
 Words: B. Bjørnson
 Music: Rikard Nordraak

PANAMA

Alcanzamos por fin la victoria
We Have at Last Achieved Victory
 Words: Jerónimo de la Ossa
 Music: Jorge A. Santos

PARAGUAY

Paraguayos, República o muerte!
Men of Paraguay! The Republic or Death!
 Words: Francisco Acuña de Figueroa
 Music: Francis Dupuy

PERU

Somos libres, scámos lo siempre!
We Are Free, Let Us Ever Be So!
 Words: José de la Torre Ugarte
 Music: José Bernardo Alcedo

PHILIPPINE COMMONWEALTH

Tierra adorada, Hija del sole Oriente
Beloved Land of the Morning
 Words: José Palma
 Music: Julian Felipe

SAUDI ARABIA

None.

SYRIA

Information lacking

TURKEY

Istiklal marsi
The March of Independence
 Words and Music: Anonymous

UKRAINE

Information lacking

UNION OF SOUTH AFRICA

Die Stem van Suid-Afrika
The Voice of South Africa
 Words: C. J. Langenhoven
 Music: M. L. de Villiers

UNION OF SOVIET SOCIALIST REPUBLICS

Hymn of the Soviet Union
 Words: A. V. Alexandroff
 Music: Sergei Mikhalkoff
 E. L. Registan

UNITED KINGDOM

God Save the King

UNITED STATES OF AMERICA

The Star-Spangled Banner
 Words: Francis Scott Key
 Music: John Stafford Smith

URUGUAY

Orientales, la patria o la tumba!
Men of Uruguay! The Fatherland or the Tomb!
 Words: Francisco Acuña de Figueroa
 Music: Fernando Quijano
 Francisco José Debaly

VENEZUELA

Gloria al bravo pueblo que el yugo lanzó
Glory to the Brave People Who Threw Off the Yoke
 Words: Vicente Salias
 Music: José Landaeta

WHITE RUSSIA

Information lacking

YUGOSLAVIA

Boze pravde, ti, sto spase
God of Justice, Save Thy People
 (Combines the hymns of Serbia, Kroatia, and
 Slovenia)
 Words: Jovan Djordjevic
 Antun Mihanovic
 Simun Jenko
 Music: Davorin Jenko
 Josip Runjanin

PITTSBURGH—A BRIEF HISTORY

By ROSE DEMOREST

Librarian, Pennsylvania Room, Carnegie Library of Pittsburgh

PART II



PITTSBURGH found itself emerging from a wilderness settlement as many new colonists arrived during the late 1700s. New homes, churches, and inns were built; a newspaper, the *Pittsburgh Gazette*, was started in

1786; and a year later the Pittsburgh Academy was opened to furnish higher education for young men. George Washington made a visit during this period and found Semple's Tavern a very good place in which to stay. A post office was opened, trade and commerce were established, books were written and published here, and in 1794 the village was incorporated as a borough.

The opportunity for trade down the Ohio River would soon be very extensive, and with this in mind there was started a series of manufactures that was to develop to such an extent that one hundred years later Pittsburgh was known as the "Workshop of the World." One of the first and most ambitious enterprises started was glass-making. Workers skilled in the art of glassmaking in Europe were brought here to help the new industry get a proper start, and soon the types of glass produced varied from the finest to the most practical.

Because of the abundance of coal in nearby regions, the metal industries were soon started, and iron and steel assumed an importance which has had a continuous history of prominence. The iron furnaces were small and crude, and the foundries were not much more

than blacksmith shops, but it was a beginning, and the results were very essential to a rapidly growing industrial community.

Shipbuilding was an early and thriving industry; some of the ships were commissioned for government service, and it was a happy day in 1798 when the armed galleys *President Adams* and *Senator Ross* were launched and sent down the Ohio River and on out to sea for war service.

The distilling of whiskey was so profitable that when the United States Congress needed new sources of revenue they passed a bill placing an excise tax on the stills and on the product. A sentiment of opposition to the tax was universal. In Pittsburgh and vicinity the feeling against it was violent; the farmers from the surrounding country districts raised abundant grain, they could easily build a still and produce an article of everyday necessity, and so they saw no reason for being taxed. An organized revolt against paying the tax resulted. The new and untried United States government had its first case of opposition to its law and sent an army to suppress the "Whiskey Insurrection," as the incident was called. The army did not arrive in time to prevent the death of a United States Major of Militia, nor to stop the rioters before they burned and destroyed the home and other property of the Inspector of Revenue, General John Neville. General Neville, with a taste for fine living, had established himself and his family in a large country house called Bower Hill, on a plantation about eleven miles southwest of Pittsburgh. After the attack, the mansion house and all the buildings were burned—all but one small building where negroes on the

plantation lived, and which they begged to have spared as their bacon was stored there. The Secretary of the Treasury, Alexander Hamilton, came here to help with the investigation, and after a formal trial in Philadelphia, where all were acquitted, the insurrection was over and the country around Pittsburgh was once again peaceful.

1800-1850

INDUSTRIAL GROWTH; A CITY

The beginning of a new century found Pittsburgh with a permanent population of over a thousand and a large floating population, as the western tide of migration was on its way and Pittsburgh became known as "The Gateway to the West." Famous men honored the town with visits, among them Henry Collot, a French general who left his impression by means of a map and a picture which have been preserved; Aaron Burr; Meriwether Lewis; Andrew Jackson; and Vincent Nolte, the friend of "Anthony Adverse" later made famous by Hervey Allen, a Pittsburgh author.

One of the new ventures was that of printing. In addition to John Scull, who printed the *Pittsburgh Gazette*, no printer was better known than Zadok Cramer; his series of *Almanacs* were best sellers of the day and his *Navigator*, famous in his time, is rare and valuable in the present. It was the first guide published for the use of boat and ship captains for the proper course to follow on the three rivers, especially the Ohio.

All the writings and publications of this early period show a conscientious approach to the responsibility of recording events of the day; without much opportunity for formal schooling on the part of the authors, some amazing examples of fine writing and scholarship are evident. An increasing number of books were published, and in 1813, and again in 1815, the first directories were printed and book-selling was a well-established business.

The borough continued to grow and flourish, and by 1816 Pittsburgh was

granted a charter as a city. Stagecoach lines ran between Philadelphia and Pittsburgh carrying mail and passengers, and a record run was made in four days. The editor of a directory of 1819 laments the lack of beauty in a city which contains so much wealth and is so important; "no splendid edifices, the streets are narrow and houses crowded together," wrote the editor.

An arsenal was built at the neighboring village of Lawrenceville, where munitions for the general defense of the country were made. The Fort Pitt Foundry made guns which boomed over Lake Erie in the War of 1812, and iron parts for warships in the same war were forged here. The canal system soon replaced the stagecoach as a new improvement in transportation, and by 1830 the Canal Basin, near the present Pennsylvania Station, was a busy center of trade and travel.

In 1845 Pittsburgh experienced a major disaster, when on April 10 a fire raged in the business section and the money loss was counted in the millions. The news of this fire was heard around the world; the *Illustrated London News* printed a picture of the burned sections, and the captain and crew of the famous frigate *Constitution*, at anchor in the harbor of Canton, China, heard about it the following August and took up a collection for the relief of the sufferers. The burned parts were soon rebuilt and great predictions were made for the future of a fast-growing city. One editor wrote, "Who can estimate or measure the immense magnitude of the trade in the future years."

In 1850 two railroads entered the city and the first oil well was drilled in western Pennsylvania, creating a new industry and vast wealth for Pittsburgh.

1850-1900

INDUSTRIAL EXPANSION

The well-established industries were greatly enlarged during this period and many new enterprises were started; Pittsburgh as a steel center was known the world over.



PITTSBURGH IN 1945

COURTESY GREATER PITTSBURGH

The Civil War found the citizens ready for extensive contributions in men, guns, and ships. The arsenal was an important source of munition supply. An explosion occurred in one of the buildings, killing a number of the workers, many of them girls; it was one of the major disasters in the history of the city. The Civil War period saw the last of the downtown district as the main residential section. The expansion of factories for the increased production of implements of war crowded out the homes and the quiet village life, and the gay domestic atmosphere on lower Penn Avenue with its lovely homes gave way to an expanding trade and industrial area. Social life of the period was highlighted by the Sanitary Fair, a large charitable event for war relief.

The decade from 1870 to 1880 was full of turmoil and hard times. The earlier great prosperity did not con-

tinue because of national panics and the financial adjustments after the Civil War. In spite of the economic handicaps, however, the city grew in population and annexations greatly increased the boundaries.

Another era of prosperity was on its way, and during the 1890s Pittsburgh was again a thriving center and "Pittsburgh Manufacture" was an expression of the utmost familiarity all over the nation; some of the great family fortunes were made here at this time.

Problems which are always found in a large industrial center were felt with a heavy hand in Pittsburgh. Serious labor disagreements resulted in railroad riots at the Union Station, and later there was a steel strike at Homestead; other problems were poor housing conditions, low standards of living, excessive typhoid fever cases, and child labor. These were some of the human

responsibilities of a city to be met and solved in its complex life.

In 1895 Andrew Carnegie established the Carnegie Library of Pittsburgh and the following year founded the Carnegie Institute, comprising the Department of Fine Arts, the Museum, and Music Hall. Carnegie Institute of Technology was projected in 1900 and opened in 1905.

1900-1940

NEW INDUSTRIES; WORLD WAR I

The turn of the century brought a period of population growth, an expanding of residential sections and development of new communities devoted to beautiful homes, and extensive public housing projects. Many new industries or new developments of former ones have characterized this period. The rivers with their improvements became veritable floating highways; extensive research found new uses for coal and oil; aluminum, the phenomenal metal of the century, whose uses, both practical and artistic, are limitless, found many new markets; ponderous equipment made possible enormous output from iron foundries; increased production in steel, glass, electrical industries, air brake, cork, food, and petroleum reached a high level that was maintained throughout World War I.

The first World War found Pittsburgh well advanced in production of munitions of war, as orders for the Allies had been in demand since 1914. The war tonnage was greatly increased after the United States entered the conflict.

After the World War another era of short-lived prosperity was followed by a depression that was world-wide. Due to the wide diversity of industries, unemployment was not so great or so sudden as in some industrial centers which focused on a few manufacturing lines.

Radio broadcasting made history here when KDKA broadcast the news of the presidential election in 1920.

The University of Pittsburgh's forty-two-story "Cathedral of Learning," which dominates the Oakland district, was begun in 1926.

In 1936 Pittsburgh had the most disastrous flood in her entire history; floods which have been recorded here since 1784 had no counterpart in this one for devastation or extent. The business section was under water, power plants were completely flooded, and there was no telephone, light, or trolley service for several days. To prevent a recurrence of such a disaster, a program of flood control has been started. The plan calls for a series of reservoirs to extend from the upper Allegheny River in the northern part of the state to the Tygart River in West Virginia.

1941-45

WORLD WAR II

The shock of another war was upon the nation and Pittsburgh industry was called upon to do its utmost. Steel was needed everywhere, and the production figures became staggering as all plants went on a day-and-night schedule. Steel that would soon be ready to armor seagoing ships, enough steel for shells, tanks, and guns, was made possible because of colossal production plans. A number of plants were converted to wartime needs, and a large synthetic rubber plant was built at nearby Kobuta.

It may be interesting for many to know that, despite the fact that Pittsburgh is an inland city, literally hundreds of vessels of war were constructed at shipyards located on the Ohio River which pursued that old historic course into the Mississippi and later on out to sea; their course followed the same route first taken by the Indians in their canoes, the French explorers, and later by the immigrants of the first part of the last century which caused Pittsburgh at that time to be known as "The Gateway to the West." In addition to this, of course, all plants and mills and every form of industrial endeavor were pushed to the limit to turn out munitions of war which have up to now proved of such great value, both in the European conflict and in the war against our enemy in the Far East.

THE PALETTES AND THE TAM O'SHANTERS

BY MARGARET M. LEE

Director of Educational Work, Department of Fine Arts, Carnegie Institute



A CIRCUS MURAL FOR THE CHILDREN'S ROOM IN CENTRAL LIBRARY

THE creative classes of the Department of Fine Arts closed the 1944-45 season with a series of exhibitions-for-a-day. In addition to the prizes awarded by the juries, the members and their guests voted for popular prizes in three of the exhibitions.

The Carnegie Studio Group, an adult class experimenting in water color under the direction of Jean Thoburn, exhibited some two hundred of their studies on June 2. Since this group is an art appreciation one, it is gratifying to find many of them participating in community art projects such as the new Arts and Crafts Center, the Associated Artists, and local settlements.

The afternoon section of the Carnegie Palette Class, the thirteen- to fifteen-year-olds directed by Dorothea Alston, presented five hundred tempera paintings in their show on Saturday, June 9.

Both afternoon and morning sections of the "Pals," as they are sometimes nicknamed, met the week following their shows for the traditional Lollipop Picnics in Schenley Park.

On June 16 the studios were turned over to the morning section of the Palettes whose teacher is Katharine McFarland. In addition to six hundred tempera paintings, these boys and girls exhibited a series of seasonal panels, painted for local hospitals and orphanages at Christmas and Easter time. Among these was a circus mural, a "special commission" for the Children's Room in Central Library.

In passing, we take pride in pointing out that four of the artists represented in Carnegie Institute's current Exhibition of Paintings by Pittsburgh Artists are former members of the Palette Class: Frank Trapp Aleta Cor-

CARNEGIE MAGAZINE

nelius, William Libby, and Marjorie Wickerham Schroeder.

The Carnegie Tam O'Shanters, the ten- to twelve-year-olds, commanded every inch of studio space for an exhibition of some two thousand of their crayon sketches on June 23. As with the other classes, exhibition day was visitors' day. Since the Lecture Hall, their regular schoolroom, scarcely accommodates the members of the class, the demonstration lesson preceding the exhibition took place in the Music Hall. While the audience assembled, fifteen young artists provided interest by drawing with pastels at the easels on the platform. Their instructor, Mrs. Catherine Wiegel Lewis, chose "A Fourth of July Parade" as her topic and Marshall Bidwell provided music.

Although bad roads prevented many children and adults from reaching the Institute from December through February, the total attendance in the creative classes was 33,535 for the 1944-45 season.

AWARDS IN THE ART CLASSES

THE PALETTES (Morning)

- First:* Margaret Larson, Peabody High School
Second: James Wetzig, Turtle Creek
Third: Anthony Calabrese, St. Mary of the Mount
Honorable Mention:
 Corinne Clendenning, Aspinwall
 Francis Greb, St. Canice
 Nancy Clendenning, Aspinwall
 Marian Jaffurs, Wilkinsburg
 Harry Akerley, Oliver

THE PALETTES (Afternoon)

- First:* Jane Schwartz, Mt. Lebanon Junior
 Margaret Murphy, Cathedral
Second: Delbert Ellis, Forest Hills Public School
Third: Rosanna Curry, McKeesport
Honorable Mention:
 Vera Stoyadinovich, McKeesport
 Jean Foster, Brookline
 Harold Neal, Rankin

STUDIO CLASS

- First:* Mrs. Dorothy Muddiman
Second: Thomas Murray
Third: Bessie Higham
Honorable Mention:
 Mary Lindsay
 Berri MacFarland



THE TAM O'SHANTERS HAVE A DEMONSTRATION LESSON IN CARNEGIE MUSIC HALL



THE GARDEN OF GOLD



THE Garden of Gold has blossomed luxuriantly this spring and early summer with gifts for the 1946 Endowment Fund from countless alumni and many friends of Carnegie Tech. Over all of this golden profusion lingers the fragrance of college-day memories and of personalities cherished in retrospect.

A check in the amount of \$2,500 from the Sperry Gyroscope Company of Great Neck, Long Island, designated for the Lynn Patterson Memorial Scholarship Fund has been received. In sending this contribution, R. E. Gillmor writes: "As you know, we considered Lynn one of our most brilliant and able executives and we are anxious to participate in the Memorial Scholarship Fund for him." Lynn Patterson, a graduate in Electrical Engineering at Carnegie Tech, class of 1912, was general sales manager of Sperry Gyroscope when he was killed in an airplane crash in this country on May 2, 1942. One of Mr. Patterson's classmates, F. I. Sigman, has also sent a gift to this scholarship fund.

A War Memorial Fund has been established with the initial contribution of \$25 sent by Mr. and Mrs. H. J. Lobach of Danville in memory of their son, Captain John H. Lobach. Captain Lobach graduated in mathematics at Carnegie Institute of Technology in 1937 and entered the United States Army in 1941 with the National Guard. He was overseas more than two years, was taken prisoner on December 21, 1944, in Belgium. American troops liberated the German prison camp in which he was held on March 28, but in a counter-attack by the enemy within a few hours, Captain Lobach was killed.

For the William E. Mott Memorial Scholarship Fund, a check for \$2,000 is the latest in a series of generous contributions from one who chooses to be

listed as "an old student" of the College of Engineering." A gift of \$500 has come from Joseph R. Dolan, E'15, and one from John H. Ferguson, E'24.

The Carnegie Museum is the recipient of two gifts for work to be done this summer. C. E. Cowan, vice-president of Heisley Coal Company of Greensburg, has presented \$1,500 to be used in an archaeological and ethnological exploration of the upper part of the Colorado River canyon of southeastern Utah. Also, \$200 has been given anonymously for purchase of various items needed in the work that J. K. Douitt and W. E. Clyde Todd are carrying on in the Hudson Bay country this summer.

Contributors to the Alumni Fund for Greater Interest in Government this past month have been: Mr. and Mrs. Marsh T. Cruikshank, E'37 and M'38; Mrs. Hallock G. Davis, M'25; William B. Golush, E'35; Austin Hiller, E'38; Mrs. W. J. Kingcome, M'37; Russell W. McGuire, E'38; Florence Ridenour, L'31.

The Chemistry Research Fund has been increased by gifts from the following: Albert R. Dervaes, E'36; Robert A. Kriegel, E'47; Mr. and Mrs. John F. Ludig, E'36 and M'35; Robert E. Morie, E'44; George F. Ondish, E'44; Samuel Lansing Seymour, E'37.

A member of the class of '35, Engineering School, Herbert F. Schwarz, has sent a check for the Class of 1917 Engineering Scholarship Fund.

For the Crabtree Memorial Scholarship Fund, donors were James W. Schofield, E'24, and Mrs. George L. Watson, L'11.

Three alumnae contributed to the Drama Fund: Mrs. Alan S. Hays, A'29; Irene Tedrow Kent, A'29; and Frances M. Miller, A'37.

Three also sent checks for the Fales Memorial Scholarship Fund: Elizabeth

CARNEGIE MAGAZINE

M. Bader, M'39; Louise Almy Brittain, M'35; and Frances Wing Graham, M'20.

Helen L. Allen, A'23, has sent \$50 for the Fine Arts Aid Fund and other alumni contributors include: Ann Reymmer Baker, A'43; Lois E. Barber, A'42; Aneita J. DeMarkus, A'31; Mrs. James G. Edmonds, A'18; Mrs. L. E. Eggerman, A'34; William G. Heim, A'36; Ada Marraccini, A'44; Allan H. Neal, A'14; Warren E. Parkins, A'30; Mr. and Mrs. Donald Scheline, E'42 and A'41; Mrs. R. Casper Swaney, A'27; Mrs. Edwin M. Wallover, M'16.

For the Graham Memorial Scholarship Fund, Mrs. H. G. McIlvried, M'26, sent a contribution.

Donors to the Hower Memorial Fund include B. F. Anthony, E'21; Warner C. Ely, E'40; John H. Ferguson, E'24; Mrs. H. E. Robertson, M'37; Irving M. Seideman, E'41; Francis J. Staudt, E'34.

The Management Engineering Research Fund during the past month was recipient of gifts from George C. Anderson, Jr., E'35; Spenser Brittain, Jr., E'38; John H. Ferguson, E'24; Robert A. Hutchison, E'33; Earl J. Lowry, E'23; Stanley Mallen, E'42; R. G. Strand, Sr.

Mr. and Mrs. Chester C. Williamson, A'33 and A'31, contributed to the Marks Memorial Scholarship Fund.

The Parry Memorial Fund has been increased by gifts during the past month from Rachel Beatty, M'18; Gail Sellers Fettke, M'17; Anna Thomas Painter, M'15; Jane L. Pritchard, M'11; Mrs. William Shapera, M'23; and Rebekah Shuman, M'09.

Capitol Printing Ink Company, Inc., of which Mrs. R. Joyce Kline is president, recently sent a \$250 check and the William Norwitz Company, \$50, for the Department of Printing Research Fund. Stanley L. Wessel, I'25, contributed \$250 to the Fund and also on the list of contributors were Robert M. DuBois, I'34, and Jacob X. Nathan, I'33.

The Department of Printing Scholarship Fund was increased by gifts from

Stanley L. Cahn, I'29; William G. Forster, I'25; Samuel Lebon, I'24; Captain William M. McNeill, I'29; and Captain Donald H. Opel, E'41.

Donors to the Secretarial Scholarship Fund this month have included the following: Myrtle E. Carey, M'33; Martha E. Cohen, M'37; Gertrude Feisner Ely, M'42; Mrs. Jane Croyle Ford, M'32; Catherine A. Hartman, M'27; Mrs. Roland P. Kelly, M'42; Lucille M. Kuehneisen, M'23; Miriam C. Kuehneisen, M'26; Mrs. Carl G. Miller, M'29; Jane Kyle Miller, M'38; Mrs. Marion M. Robinson, M'44; Mary Jane Shuman, M'44; Mrs. John H. Stahl, M'41.

For the George H. Smith Memorial Fund, David K. Reid, E'10, sent a check this month.

Gilmore L. Tilbrook, E'15, has sent an additional contribution of \$100 for the Tilbrook Aviation Library and Model Museum.

A contribution to the William Philpot Greer Student Loan Fund came from Grace L. Aldrich, L'17.

Among the larger contributions to the General Endowment Fund in the past month are \$250 from Dr. Rufus H. Fitzgerald, Chancellor-elect of the University of Pittsburgh; a \$500 Series "F" War Bond from John L. Holmquist, E'25; \$200 from Forrest H. Martell, E'22; \$100 each from Albert J. Haskens, E'32, George W. Smith, E'21, S. M. Siesel, E'08, and Raymond J. Wean, I'17; \$75 from William L. Abbott, E'13; \$50 from Paul M. Mikus, E'47, Warren D. Nupp, E'33, Lieutenant George A. Rodney, E'42, Staff Sergeant and Mrs. David J. Sloane, E'40 and A'43.

Contributions have also been made by Cwens, honorary scholastic society; by the Senior Class at Margaret Morrison Carnegie College, by Omicron Delta Chapter of Chi Omega Fraternity, by the Youngstown Women's Clan, and by the Southern California Clan. Included in the last group of donors are Mrs. John C. Bane, A'38; Mrs. M. J. Bussard, A'24; Joseph C. Major, E'24; Dan M. Newell, E'35; and Mrs. F. W. Rhodes, M'16.

The honor roll of Carnegie Tech alumni who have contributed to the 1946 Endowment Fund recently is a long one. The list includes Hubert Aaronson, E'45; Janet W. Acheson, L'31; B. H. Aires, E'25; Mrs. Dorothy Roy Anderson, M'29; Kenneth L. Arnold, E'24; Milton H. Aronson, E'39; James A. B. Ashwell, I'30.

Lieutenant Commander Ralph Bag-galey, Jr., E'22; Robert W. Bankier, I'25; Myron F. Barrett, I'19; Mrs. Charles R. Beatty, M'10; Arthur L. Beck, E'22; Charles E. Beedle, E'34; Irene S. Bibza, M'40; Eleanor B. Bice, M'39; John I. Bohnert, E'32; Edmund R. Boots, E'12; Adelmo Botta, E'34; Mrs. Milton Bradley, M'30; Mrs. W. J. Bragdon, M'10; Captain George W. Brahmst, I'29; Edward A. Brand, E'23; Mrs. Charles C. Brinton, M'11; Raymond J. Bryan, E'12; Charity Jane Brock, A'34; Wallace E. Burk, E'16; Mrs. Marjorie Burrey; John C. Byler, E'22.

Mrs. Gertrude S. Cameron, M'30; Dorothy M. Carey, M'32; John Justin Carr, A'28; William P. Caywood, E'42; Mr. and Mrs. E. K. Chaffey, Jr., E'42 and A'41; David Challinor, E'09; Henry Chequer, Jr., I'26; Harold B. Cheswick, E'19; Joseph F. Christoff, I'26; Mr. and Mrs. Gilbert C. Clark, E'20 and M'20; John C. Cochrane, E'27; Robert L. Coulter, I'26; Martin I. Cowen, E'20; George L. B. Cox, E'41; Charles E. Crede, E'35; Mrs. H. A. Crichton, A'27; Albert E. Criqui, E'32; Ray F. Crom, I'13.

Mary M. Danley, M'21; James A. Darnall, E'41; Mary Zellers Darnall, M'42; Mrs. Sylvia Matlat David, M'43; Marion F. Davis, E'34; Timothy S. Denke, A'39; George J. Dienes, E'40; Leah Keller Dietrich, M'30; William A. Dilks, E'36; Joseph Dopler, I'20; Eleanor Law Douglass, M'13; Mrs. Imogene Schory Duff, M'41; William F. Eames, E'18; Mrs. John Eaton, M'17; Raymond L. Ely, E'40; Paul B. Evers, Jr., E'46; Lynn E. Exline, E'09.

Mrs. Frank M. Falk, M'39; Lieu-tenant Franklin O. Fingles, E'29;

GEORGE E. EVANS

The Boards of Trustees of the Carnegie Library of Pittsburgh, Carnegie Institute, and Carnegie Institute of Technology, desire to express their sorrow in the death, on Friday, June 8, 1945, of George E. Evans, who since November 8, 1935, had been a member of these Boards. During these years of membership he had been a most active and loyal trustee, and one who had won the esteem of his colleagues for his devotion and interest in all phases of the work.

He served on various committees but was particularly active in the operations of the Carnegie Library and the Carnegie Institute of Technology, and as a member of the Library Committee and the Executive Committee of Carnegie Institute of Technology he was held in high regard for his sound advice and for the unfailing interest he took in all their activities. A man of great mental honesty, far-sighted vision, and devotion to the cause of the betterment of his city, his death is a great loss to the community and to the various organizations with which he was connected.

The Boards of Trustees of these Carnegie institutions desire to make this record of their respect and admiration for Mr. Evans, and wish to convey to Mr. Evans' family the assurance of their deep sympathy in their bereavement.

Charles H. Fitzwilson, Jr., E'36; Fredric E. Flader, E'20; Hugh Flaherty, I'30; John T. Fleck, E'46; Charles R. Fleishman, E'21; Lorraine B. Furbish, L'27; Sidney F. Galvin, E'16; Raymond T. Gillis, E'14; Mrs. Nathan Goldman, M'31; Paul D. Good, I'21; Dr. Florence Gordon, M'27; Mrs. James D. Gray, M'31; Walter Gray, E'09; Abraham Grodner, E'25; Robert Gruen, A'34.

Madeleine Half, M'31; Carl T. Hal-ler, Jr., E'39; Wallis S. Hamilton, E'35; Mrs. Irene Q. Harnack, M'09; James T. Harnack, A'41; H. W. Hartman, E'09; Leon J. Hartman, E'30; Mrs. E. Donald Hayes, M'22; Virginia C. Hecht, A'30; Jack Heller, E'42; George A. Henderson, E'22; Lewis F. Herron, E'26; Alma

CARNEGIE MAGAZINE

E. Hiller, M'14; Harold Hirsch, E'40; Private Thomas D. Hollihan, E'44; H. H. Hook, I'09; Mrs. Richard L. Hughes, M'37.

Henry A. Jandl, A'35; Major George W. John, E'32; Ensign Ernest E. Johnson, Jr., E'46; Kurth H. Johnson, E'41; Mrs. Grace Griffin Jones, M'09; R. N. Jones, E'20; Elmer C. Juhnke, E'31; Richard B. Kamerer, E'33; Captain Anthony J. Karpinski, E'42; Mrs. Walter M. Kelsey, M'39; Elizabeth L. Kettering, M'18; Kenneth M. Kirkland, E'33; Myron Kitaif, E'20; Leah Rothaus Kolodney, M'28; Charles C. Krane, A'21; Harry D. Krummell, E'20; Mrs. Mildred A. Krummell, M'24; Carl A. Kuehl, E'42.

Thomas J. Landau, E'38; Mr. and Mrs. Arthur F. Leet, E'21 and M'21; Daniel E. Lehanr, Jr., E'33; Murray Ralph Levis, I'32; Mrs. William Lewis, A'31; August J. Lipanovich, E'42; Mrs. Walter R. Lochmiller, M'37; R. F. Lunger, E'20; L. C. Lustenberger, Jr., E'26; Charles B. Lyman, E'34.

Gaile E. Maikenknecht, E'42; Charles P. Marsden, E'23; Edward C. Marshall, E'34; Frederic M. McClelland, E'25; John W. McCredie, E'26; Lieutenant T. A. McDowell, Jr., E'38; Edward B. McElroy, E'22; Russell G. McMillen, E'40; Lawrence W. McMurry, E'37; Mrs. James H. McQuade, M'35; Alvin B. Merz, E'46; Major Joseph M. Michaelson, E'32; Guthrie M. Mitchell, E'35; Joseph C. Mitchell, M'35; John B. Moore, E'22; Glenn J. Moorhead, E'28; Edward J. Morris, I'31; Mr. and Mrs. Philip Morrison, E'36 and M'36; Mrs. Justus Mulert, M'28, Cecelia Murdoch, M'18; Mrs. Mary M. Murphy, M'23.

Naomi Ellman Neft, M'43; Horace G. Nichol, E'21; Major A. Gregg Noble, E'29; Mrs. George C. Norman, M'35; Ruth W. Oppenheimer, M'37; J. Wilbur Owen, A'30; Edward R. Patton, E'24; John Joseph Pagnato, A'35; Michael Perch, E'39; Adalbert G. Posluszny, E'44; Louise F. Potter, M'40; James R. Power, E'27; Mrs. James R. Power, M'26; Walter J.

Poyntz, A'28; A. Winkler Prins, E'21; Laurence A. Pursglove, E'44; Major John N. Ralston, E'29; Joseph J. Riedl, I'30; John L. Ross, E'19; Ensign Ruth M. Rotzler, M'43; Leonard W. Rusiewicz, E'35.

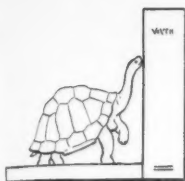
Walter S. Semple, Jr., A'30; Stanley J. Sarek, E'36; Dorothy D. Savage, M'12; Mr. and Mrs. Gerard I. Sawyer, E'36 and M'36; Raymond H. Schaefer, E'34; Karl F. Schauwecker, E'34; Joseph Anton Schmid, A'29; Horace I. Schmidt, I'32; Mrs. F. F. Schock, Jr., M'22; Benjamin L. Schwartz, E'16; Harold L. Schwartz, A'26; Captain Robert F. Schwerin, E'42; Thomas R. Searson, I'25; Mr. and Mrs. Christian Seibel, Jr., E'41.

Major and Mrs. William K. Shaffer, E'38 and M'38; Henry Shore, E'25; Myra E. Shull, M'38; Eugene M. Simons, E'37; W. W. Slocum, E'08; Abe Smith, E'10; S. Alton Smith, I'19; Sue Smith, M'17; Walter C. Smith, E'21; Mrs. F. W. Stahl, M'24; Paul E. Stermer, E'19; E. S. Stockslager, E'20; Foster B. Stulen, E'31; William Sulin, I'22; Mrs. Robert J. Sullivan, A'26, Dan A. Sutcl, E'38.

Beatrice Taylor, M'44; Ruth A. Tejan, M'30; Mrs. Frances K. Test, A'20; Horace S. Thorne, I'14; Charles H. Todd, E'21; Clara L. Toudy, M'09; John W. Townsend, E'30; Richard Turner, I'32; Phil Twiford, I'17; Wilfred R. Uffelman, E'33; Mrs. Vera V. Vacquier, M'27; Mrs. Damon Vickers, M'23; Winslow C. Vickery, E'29.

Charles H. Wagner, Jr., E'37; Robert B. Watkins, I'33; Robert H. Watt, E'22; Jerome H. Waxman, E'11; H. A. Weideli, I'25; Richard S. Wentz, E'34; Arthur F. Weston, E'25.

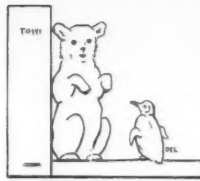
As of May 31, contributions to the 1946 Endowment Fund of the Carnegie Institute of Technology amounted to \$2,779,750.63 paid and \$391,833 pledged, or a total of \$3,171,583.63 toward the goal of \$4,000,000 by June 30, 1946. Carnegie Corporation of New York stands pledged to add \$8,000,000 at that time, for a total new endowment of \$12,000,000.



THE SCIENTIST'S BOOKSHELF

By M. GRAHAM NETTING

Curator of Herpetology, Carnegie Museum



MAMMALS OF THE PACIFIC WORLD By T. D. CARTER, J. E. HILL, and G. H. H. TATE. New York: The Macmillan Co. 1945. 227 pp., 69 illustrations. \$3.00. Carnegie Library call no. 599 C23.



IN the review of *The Pacific World* in the October 1944 *CARNEGIE MAGAZINE*, it was mentioned that this introductory volume would be followed by supplementary handbooks. The present volume is the first of these to

appear in a trade edition; it was also issued, somewhat earlier, in a paper-bound Army edition. This book will be followed by five others, treating in similar detail the native peoples, the fishes and shells, the reptiles, the plants, and the insects found on the islands of the Pacific and the East Indies. Since the Pacific is now the focus of our attention, several of these volumes will be reviewed here subsequently.

This handbook is divided into four sections and several appended portions. Section One, "Characteristics and Classification of Mammals," is only ten pages in length, but it arms the reader with the fundamentals of mammalian classification. There is, for example, a very lucid discussion of the types of dentition in mammals, a matter of basic importance, since a mammalogist has even more interest in teeth than a horse trader. Teeth, and limb characters as well, are illustrated in excellent drawings by Janet Roemhild, a Pittsburgh girl in whose artistic achievements the Carnegie Museum takes pardonable pride, since her childhood interest in biology was fostered here.

Section Two, comprising more than

half the volume, is a veritable parade of the many and diverse mammals which occur in the Pacific area. The very names of many—teledu, anoa, linsang, bandicoot, serow, cuscus, tamarau—can be rolled on the tongue more easily than the possessor can be envisioned. Other names—koala, wombat, pangolin, slow loris—will carry the reader back to long-forgotten zoo books of childhood. About eighty of the mammals are pictured in attractive sketches by George F. Mason. These portray character very well, but may convey an erroneous impression of comparative size. The dainty little mouse deer, for example, looms larger than the stout babirusa, on the facing page.

The writer of this review feels very strongly that handbooks should present in terse form and small type the technical information required for purposes of identification and should differentiate, in larger type, material of more general interest. Anthony's *Field Book of North American Mammals* is a good example of such felicitous arrangement. In this book, however, description, size, distribution, and habits are merged, often not even paragraphed, to the confusion of the reader in search of specific information. The varieties of "cowlicks" in leaf monkeys, for example, are important to one faced with the problem of naming a specimen, but they make wearisome reading to one interested in the general biology of mammals half a world away.

In spite of objection to its organization, it must be admitted that Section Two contains many rewarding items of information for the persevering reader. The platypus places its eggs in a nest,

while the spiny anteater carries its egg in its pouch. The flesh of most flying foxes is palatable if care is exercised in skinning, to prevent the fur from touching the flesh. The naked bat, "one of the ugliest and strangest-appearing mammals in existence," has a large pocket under each wing "which perhaps serves to carry the young." Both the small, one-horned Javan rhinoceros and the still smaller, two-horned Sumatran rhinoceros are now excessively rare because their horns, blood, and other parts, are important ingredients in Chinese medicines. The long-eared bat of Japan folds its ears, as well as its wings, when resting.

Part Three consists of a discussion of factors in earth history which have affected the distribution of mammals and their present distribution in the Pacific area. Australia, the outstanding isolationist area of the world from a biological standpoint, has been without land connections, except with New Guinea, for fifty million years or more. In consequence, the lowly pouched mammals, spared fatal competition with more efficient types evolving elsewhere, flowered into an amazing diversity of forms. Pouched counterparts of squirrels, mice, lemurs, woodchucks, weasels, wolves, and moles, and now extinct creatures rivaling the hippopotamus in size, were developed. Strangely enough, nature's experiments in Australia produced neither marsupial bats nor marsupial swimmers.

Part Four is a disappointingly brief account of the need for preservation of Pacific area mammals, and antithetically but properly, an explanation of methods of collecting and preserving specimens. The authors state: "The Luchu and Sumatran rabbits, the long-tailed fruit bats of the Melanesian Islands, the New Zealand bat, the babirusa, anoa, macaque, and black ape of Celebes, a small deer on the Bawean Islands near Java, the tapir of Sumatra and the Malay Peninsula, the two Malaysian rhinoceroses, many of the marsupials, and a number of inconspicuous mam-

mals of other groups are in need of sanctuary. Every effort should be made to protect these rare and scientifically invaluable animals."

There is a glossary of technical terms whose use in the text could scarcely be avoided, following which the volume ends with an extremely useful and well-organized thirty-nine page "Alphabetical Index-Checklist of the Islands." Under the name of each island or island group of the Pacific there is a concise listing of the mammals that are known to occur. Both common and technical names are used and page references are included to facilitate speedy reference to the text discussion of each animal. Even the reader on the run may flip over the pages to Christmas Island, Polynesia, for example, and see at a glance that its mammals consist of: "RODENTS. common rat (*Rattus*), 114; house mouse (*Mus*), 113." Although this list appears to have been prepared with meticulous care, it is to be expected that use of it will bring to light a few omissions. The failure to include the introduced axis deer under the Hawaiian Islands is one such example.

Mammals of the Pacific World and its forthcoming companion volumes have been long and urgently needed. Our forces barely land on an island before air-mail queries about its flora and fauna are en route to museum curators and specialists in the United States. Fighting men cannot carry libraries into the foxholes of an invasion beachhead, but if they are forced into intimate contact with sundry strange creatures, curiosity, if not necessity, inspires a craving for exact information. Since the early days of the war, museum staffs have found it necessary to comb publications in a dozen languages in order to answer their international correspondence. Therefore, quibble though one may over imperfections, harassed curators salute Carter, Hill, and Tate, as well as the authors of all other wartime handbooks, for providing answers to the questions of the quiz kids in uniform.

CARNEGIE MAGAZINE

THE EDITOR'S DESK

Summer work of the Carnegie Institute staff, although restricted by wartime travel conditions, includes study and teaching in addition to the Museum field trips.

Marshall Bidwell will give three lectures on "The Art of Organ Accompaniment," also a recital, at the Northwestern University Summer School of Church Music, in August.

M. Graham Netting will be guest lecturer at the West Virginia Conservation Training School at Jackson's Mill, W. Va., in July, and while there will add to the Museum's herpetological collection from Lewis County.

In passing, it might be mentioned that O. E. Jennings is co-operating with preliminary plans made by the Pennsylvania Federation of Women's Clubs for a similar Conservation Training School to be held in Pennsylvania next year.

Dorothea Alston, who teaches the afternoon section of the Palettes, has been chosen by the Board of Education as one of three city art teachers to study at the International School of Art at Guadalajara, Mexico, under sponsorship of the Frick Educational Commission.

Katharine McFarland, who teaches the Palettes on Saturday mornings, will study at the James Sneed Studio in Philadelphia.

—32—

After Mount Morris High School students captured the majority of prizes in the Nature Study Contest this spring at Carnegie Museum—seemingly an annual custom with them—Jane A. White wrote Glenn Boyer, their teacher, asking about their program. Excerpts from his reply follow:

The town, of 500 population, nestled in the hills of Greene County, supports a high school of 60 students. Our Nature Club was organized in 1934 by the late Noel Lohr and each year has entered the Museum contest. This past year the Club numbered eight members. The boys study during the summer and spend their spare time collecting plants, insects, and minerals. People of the community continually are bringing in specimens for identification and also to contribute for the school collection. During the latter half of the school year, the Club members meet once a week to discuss the Museum's Study List. This past term, two of our boys have taken up taxidermy. The Club recently spent an afternoon at West Virginia University and has a standing invitation to use Waynesburg College facilities. Our activities are financed entirely by the boys themselves, who earn money by selling soft drinks, candy, and popcorn at football games, and by collecting scrap paper.

—33—

Study Lists for the 1946 Nature Contest are now available on request from Carnegie Museum. The Elementary List is designed for children in grades 5 through 8; the Senior, for grades 9 through 12. The Study Lists include plants, vertebrates and invertebrates, mineralogical and paleontological specimens.

CARNEGIE LIBRARY OFFICERS AND COMMITTEES

WILLIAM FREW, *President*

WILLIAM WATSON SMITH, *Vice President*

A. L. WOLK, *Secretary*

THOMAS L. ORR, *Treasurer*

LIBRARY COMMITTEE

A. L. WOLK, *Chairman*

JOHN F. CASEY

H. B. KIRKPATRICK

WALTER R. DEMMLER

WILLIAM S. MOORHEAD

BUILDINGS AND GROUNDS COMMITTEE

JOHN F. CASEY, *Chairman*

ARTHUR E. BRAUN

CORNELIUS D. SCULLY

THOMAS J. GALLAGHER

FRED W. WEIR

FINANCE COMMITTEE

ARTHUR E. BRAUN, *Chairman*

JOHN F. CASEY

THOMAS L. ORR

AUDITING COMMITTEE

FREDERICK G. BLACKBURN, *Chairman*

A. L. WOLK

—34—

STAFF

RALPH MUNN, *Director*

ADALINE BERNSTEIN, *Head of Order Department*

*WILLIAM W. BRYAN, *Assistant to the Director*

MARY E. FOSTER, *Head of Schools Department*

ELLWOOD H. McCLELLAND, *Technology Librarian*

RUTH D. MCCOLLUGH, *Head of Catalogue Department*

ALICE THURSTON MCGIRR, *Reference Librarian*

ELIZABETH NESBITT, *Head of Boys and Girls Department*

ARTHUR D. SCOTT, *Head of Printing and Binding Department*

MARTHA V. WIRTH, *Executive Secretary*

*Absent on military leave.

BEQUESTS

In making a will, bequests for the Carnegie Library may be as follows:

I do hereby give and bequeath to the

CARNEGIE LIBRARY OF PITTSBURGH

.....Books, or.....Dollars

CARNEGIE MAGAZINE

CARNEGIE INSTITUTE OFFICERS AND COMMITTEES

WILLIAM FREW, *President*
ROY A. HUNT, *Vice President*
AUGUSTUS K. OLIVER, *Secretary*
THOMAS L. ORR, *Treasurer*

MUSEUM COMMITTEE

GEORGE H. CLAPP, *Chairman*
FREDERICK G. BLACKBURN RICHARD K. MELLON
HOWARD N. EAVENSON W. L. MELLON
THOMAS J. GALLAGHER JAMES C. REA
H. J. HEINZ II FREDERIC SCHAEFER
THOMAS E. KILGALLEN JOHN B. SEMPLE

FINE ARTS COMMITTEE

MOORHEAD B. HOLLAND, *Chairman*
EDWARD DUFF BALKEN WILLIAM S. MOORHEAD
J. FREDERIC BYERS AUGUSTUS K. OLIVER
ROBERT E. DOHERTY CHARLES J. ROSENBLUM
HOWARD N. EAVENSON FREDERIC SCHAEFER
ROY A. HUNT CORNELIUS D. SCULLY
WILLIAM WATSON SMITH

AUDITING COMMITTEE

FREDERICK G. BLACKBURN, *Chairman*
A. L. WOLK

FINANCE COMMITTEE

ARTHUR E. BRAUN, *Chairman*
JOHN F. CASEY THOMAS L. ORR
ROY A. HUNT JAMES C. REA
WILLIAM M. ROBINSON

PENSION COMMITTEE

HOWARD N. EAVENSON, *Chairman*
H. J. HEINZ II EDWARD J. LEONARD
MOORHEAD B. HOLLAND JAMES C. REA

MUSIC HALL COMMITTEE

WILLIAM P. WITHEROW, *Chairman*
JOHN F. LABOON JOHN LESTER PERRY
EDWARD J. LEONARD JAMES C. REA

ADVISORY COMMITTEE

FREDERICK G. BLACKBURN ROY A. HUNT
ARTHUR E. BRAUN AUGUSTUS K. OLIVER
JOHN F. CASEY THOMAS L. ORR
GEORGE H. CLAPP WILLIAM WATSON SMITH
HOWARD N. EAVENSON WILLIAM P. WITHEROW
MOORHEAD B. HOLLAND A. L. WOLK

NOTE: The President is ex officio a member of all Committees.

CARNEGIE INSTITUTE STAFF

WILLIAM FREW, *President*

J. C. JEFFRIES, *Auditor*
WILLIAM A. MORTEN, *Assistant Treasurer*
MINNIE C. RANKIN, *Secretary to the President*

DEPARTMENT OF FINE ARTS

HOMER SAINT-GAUDENS, *Director*
JOHN O'CONNOR, JR., *Acting Director*
ANNE K. STOLZENBACH, *Secretary*
MARGARET M. LEE, *Director of Educational Work*

CARNEGIE MUSEUM

ANDREY AVINOFF, *Director Emeritus*
O. E. JENNINGS, *Acting Director; Curator of Botany and Director of Public Education,*
STANLEY T. BROOKS, *Curator of Invertebrate Zoology*
J. KENNETH DOULT, *Curator of Mammalogy*
OTTMAR F. VON FUEHRER, *Staff Artist*
MAUD J. GITTINGS, *Librarian*
ARTHUR W. HENN, *Curator of Ichthyology and Editor*
J. LeROY KAY, *Curator of Vertebrate Paleontology*
M. GRAHAM NETTING, *Curator of Herpetology*
WALTER R. SWEADNER, *Curator of Entomology*
W. E. CLYDE TODD, *Curator Emeritus of Ornithology*
ARTHUR C. TWOMEY, *Associate Curator of Ornithology*
I. P. TOLMACHOFF, *Curator of Invertebrate Paleontology and Acting Curator of Mineralogy*
EUGENIA MCCALLA, *Secretary*

CARNEGIE MUSIC HALL

MARSHALL BIDWELL, *Organist and Director of Music*
ROY B. AMBROSE, *Manager*

DEPARTMENT OF BUILDINGS & GROUNDS

ROY B. AMBROSE, *Manager*
MARY C. HARDY, *Secretary*

BEQUESTS

In making a will, money left to the Carnegie Institute or the Carnegie Institute of Technology, should be covered by the following phrase:

I do hereby give and bequeath to the
CARNEGIE INSTITUTE

(or)
CARNEGIE INSTITUTE OF TECHNOLOGY
in the City of Pittsburgh, Pennsylvania

.....Dollars

CARNEGIE MAGAZINE

CARNEGIE INSTITUTE OF TECHNOLOGY

WILLIAM FREW, *Chairman*
 ROY A. HUNT, *Vice Chairman*
 AUGUSTUS K. OLIVER, *Secretary*
 THOMAS L. ORR, *Treasurer*

ROBERT E. DOHERTY, *President*

EXECUTIVE COMMITTEE

WILLIAM FREW, *Chairman*
 AUGUSTUS K. OLIVER, *Secretary*

FREDERICK G. BLACKBURN	*ANTHONY J. KERIN
WALTER J. BLENKO	JOHN F. LABOON
ROBERT E. DOHERTY	*ROSSELL MILLER
HOWARD N. EAVENSON	WILLIAM S. MOORHEAD
*J. C. HOBBS	THOMAS L. ORR
ROY A. HUNT	*CHARLES E. WILSON
*F. B. JEWETT	WILLIAM P. WITHEROW

(*Nontrustee members)

AUDITING COMMITTEE

FREDERICK G. BLACKBURN, *Chairman*
 A. L. WOLK

FINANCE COMMITTEE

ARTHUR E. BRAUN, <i>Chairman</i>	
JOHN F. CASEY	THOMAS L. ORR
WILLIAM FREW	JAMES C. REA
ROY A. HUNT	WILLIAM M. ROBINSON

-3-

STAFF

ROBERT E. DOHERTY, *President*
 H. R. PATTON, *Controller*
 RALPH MUNN, *Librarian*

COLLEGE OF ENGINEERING

WEBSTER N. JONES, *Director*
 WILLIAM R. WORK, *Assistant Director*

DEPARTMENT HEADS

WARREN L. McCABE, *Chemical Engineering*
 FREDERIC T. MAVIS, *Civil Engineering*
 B. R. TEARE, JR., *Electrical Engineering*
 LAWRENCE R. GUILD, *Management Engineering*
 THOMAS G. ESTEP, *Acting Head, Mechanical Engineering*
 ROBERT F. MEHL, *Metallurgical Engineering*
 J. C. WARNER, *Chemistry*
 HAROLD A. THOMAS, *Acting Head, Mechanics*
 FREDERICK SEITZ, *Physics*
 GLEN U. CLEETON, *Printing*
 HARRY M. McCULLY, *Drawing and Descriptive Geometry*

COLLEGE OF FINE ARTS

W. A. READIO, *Acting Director*

DEPARTMENT HEADS

W. FRANK HITCHENS, *Architecture*
 *HENRY F. BOETTCHER, *Drama*
 CHARLES A. H. PEARSON, *Acting Head, Music*
 W. A. READIO, *Painting and Design*
 JOSEPH BAILEY ELLIS, *Sculpture*
 *Absent on military leave.

MARGARET MORRISON CARNEGIE COLLEGE

CHARLES WATKINS, *Director*

DEPARTMENT HEADS

VIRGINIA M. ALEXANDER, *Costume Economics*
 HAROLD L. LANG, *General Science*
 CALLA VAN SYCKLE, *Home Economics*
 EDITH M. WINCHESTER, *Secretarial Studies*
 MARY CLARKE BURNETT, *Social Work*
 MABEL B. TRILLING, *Vocational Home Economics*

DIVISION OF HUMANISTIC AND SOCIAL STUDIES

GLEN U. CLEETON, *Director*
 ELLIOTT DUNLAP SMITH, *Visiting Professor Maurice Falk Chair of Social Relations*

DEPARTMENT HEADS

_____, *Economics*
 MALCOLM McLEOD, *English*
 ROBERT D. GREGG, *History*
 JOSEPH B. ROSENBAUGH, *Acting Head, Mathematics*
 WILLIAM F. KAMMAN, *Modern Languages*
 MAX SCHOEN, *Psychology and Education*

CARNEGIE LIBRARY SCHOOL

RALPH MUNN, *Director*
 FRANCES H. KELLY, *Associate Director*

COAL RESEARCH LABORATORY

H. H. LOWRY, *Director*

METALS RESEARCH LABORATORY

ROBERT F. MEHL, *Director*

RESERVE OFFICERS' TRAINING CORPS

COLONEL PAUL JAMES DOWLING, *Professor of Military Science and Tactics*

DIVISION OF STUDENT PERSONNEL AND WELFARE

J. M. DANIELS, *Acting Director*

DIVISION OF PHYSICAL WELFARE

CLARENCE OVEREND, *Chairman of Administrative Committee*

BUREAU OF NEWS AND PUBLICATIONS

MAX E. HANNUM, *Manager*

CARNEGIE MAGAZINE

BOARD OF TRUSTEES WHO'S WHO

Under the charters the same thirty-six trustees serve both the Carnegie Institute and the Carnegie Institute of Technology, and eighteen of them (starred) are also trustees of the Carnegie Library.

EDWARD DUFF BALKEN
Princeton. Art.

FREDERICK G. BLACKBURN
Yale. Carnegie Institute of Technology. Vice President, Union Trust Company of Pittsburgh. Museum, Tech, Auditing, Advisory.

WALTER J. BLENKO
Carnegie Institute of Technology. Law School Duquesne University. Stebbins, Blenko & Webb. Tech.

*ARTHUR E. BRAUN
Chairman, Farmers Deposit National Bank. Buildings and Grounds, Finance, Advisory.

*J. FREDERIC BYERS
Yale. Chairman, A. M. Byers Company. Art.

*JOHN F. CASEY
Duquesne University. Chairman, John F. Casey Company. Library, Buildings and Grounds, Finance, Advisory.

GEORGE H. CLAPP
University of Pittsburgh. President, Board of Trustees, University of Pittsburgh. Museum, Advisory.

*WALTER R. DEMMLER
City Council. Library.

ROBERT E. DOHERTY
University of Illinois. President, Carnegie Institute of Technology. Tech, Art.

HOWARD N. EAVENSON
Swarthmore. Mining Engineer. Museum, Pension, Tech, Art, Advisory.

*WILLIAM FREW
Yale. Law School University of Pittsburgh. Washington and Jefferson, Honorary. Trustee, Carnegie Corporation of New York.

*THOMAS J. GALLAGHER
City Council. Museum, Buildings and Grounds.

H. J. HEINZ II
Yale. President, H. J. Heinz Company. Museum, Pension.

MOORHEAD B. HOLLAND
Princeton. Law School University of Pittsburgh. Vice President, Peoples-Pittsburgh Trust Company. Art, Pension, Advisory.

ROY A. HUNT
Yale. University of Pittsburgh, Honorary. President, Aluminum Company of America. Art, Tech, Finance, Advisory.

*THOMAS E. KILGALLEN
Duquesne University. President, City Council. Music Hall.

*H. B. KIRKPATRICK
University of Illinois. President, Pittsburgh Board of Public Education. President, Kappan Building, Inc. Library.

JOHN F. LABOON
Carnegie Institute of Technology. Director, Allegheny County Bridges, Highways, and Tunnels. Tech, Music Hall.

*EDWARD J. LEONARD
City Council. Music Hall, Pension.

RICHARD K. MELLON
Princeton. President, Mellon National Bank. Museum.

*W. L. MELLON
Chester Military Academy. Chairman, Gulf Oil Corporation. Museum.

*WILLIAM S. MOORHEAD
Yale. Law School University of Pittsburgh. Moorhead & Knox. Tech, Library, Art.

AUGUSTUS K. OLIVER
Yale. Chairman, Pittsburgh Coal Company. Art, Tech, Advisory.

*THOMAS L. ORR
Hamilton. Vice President and Cashier, Mellon National Bank. Tech, Advisory.

JOHN LESTER PERRY
President, Carnegie-Illinois Steel Corporation. Music Hall.

JAMES C. REA
Princeton. Vice President, Oliver Iron and Steel Corporation. Museum, Music Hall, Pension, Finance.

*WILLIAM M. ROBINSON
Princeton. Law School University of Pittsburgh. Reed, Smith, Shaw & McClay. Finance.

CHARLES J. ROSENBLUM
Yale. President, Rosenbloom Finance Corporation. Art.

FREDERIC SCHAEFER
University of Pittsburgh. President, Schaefer Equipment Company. Museum, Art.

*CORNELIUS D. SCULLY
University of Pennsylvania. Law School University of Pittsburgh. Mayor of Pittsburgh. Art, Buildings and Grounds.

JOHN B. SEMPLE
Lehigh. Museum.

*WILLIAM WATSON SMITH
Princeton. Smith, Buchanan & Ingersoll. Art, Advisory.

*FRED W. WEIR
City Council. Buildings and Grounds.

WILLIAM P. WITHEROW
Yale. President, Blaw-Knox Company. Music Hall, Tech, Advisory.

*A. L. WOLK
Columbia University. Law School University of Pittsburgh. City Council. Auditing, Library, Advisory.

Pittsburgh
Koppers

or, Alle-
Tunnels.

Bank.

Gulf Oil

Pittsburgh,

ny. Art,

Mellon

poration.

and Steel
Pension,

Pittsburgh.
e.

poration.

Schaefer

ool Uni-
rgh. Art,

soll. Art,

y. Music

iversity of
Library,